

REMARKS

Pursuant to 37 C.F.R. §1.111, reconsideration of the instant application, as amended herewith, is respectfully requested. Entry of the amendment is requested.

Claims 1-50 are presently pending before the Office of which claims 9-20 and 29-50 are withdrawn due to a restriction requirement. No claims have been canceled. Applicant has amended the claims. No new matter has been added. Support for the amendments can be found throughout the specification as originally filed. Applicant is not intending in any manner to narrow the scope of the originally filed claims.

The Examiner's Action mailed December 23, 2004 and the references cited therein have been carefully studied by Applicant and the undersigned counsel. The amendments appearing herein and these explanatory remarks are believed to be fully responsive to the Action. Accordingly, this important patent application is believed to be in condition for allowance.

Attached are terminal disclaimers to overcome the judicially created doctrine of obviousness-type double patenting over claim 1 of co-pending application 10/277,841 and over claims 1 and 5 of existing patent US6,689,259.

Relying on 35 U.S.C. §102(b), the Examiner has rejected the subject matter of claims 1-8 as being anticipated by Gonzalez (referred to hereinafter as "Gonzalez" or the "'060 patent"). Applicant respectfully traverses the rejection and requests reconsideration.

Applicant respectfully submits that it is important to note that, historically, the Office and the Federal Circuit has required that for a §102 anticipation, a single reference must teach (i.e., identically describe) each and every element of the rejected claim. The Office has steadfastly and properly maintained that view.

The Examiner alleges that the '060 patent "anticipates the invention as claimed. Gonzalez teaches (see col. 3, line 54 to col. 4, line 3 and Fig. 1) an electrolyzer for the separation of water including an aqueous electrolytic solution comprising water filling an electrolysis chamber such that a gas reservoir region is formed above the solution, two principal electrodes 20 as anode and cathode being immersed in the solution, one or more supplemental electrodes immersed in the solution interposed between the principal electrodes wherein all of the electrodes are held in fixed spatial relationship and the electrolyzer produces a combustible gas of the general formula 'H_xO_y'."

Applicant respectfully submits that the examiner has misconstrued the disclosure of the cited patent.

Col. 3, lines 54-57 clearly states that Gonzalez's electrolyzer produces a **mixture of H and O gases**. This mixture is widely known in the art as Brown's gas. That is, the H is separate and the O is separate. In fact, claim 1 of Gonzalez discloses that his device produces hydrogen and oxygen gases in a stoichiometric proportion, that is, 2 H gas to 1 O gas. Applicant's invention is adapted and designed such that it does not produce Brown's gas. On the contrary, Applicant's invention is designed to separate the water such that its constituents of H and O are produced **jointly** to produce a combustible gas composed of **combinations** of **hydrogen and oxygen atoms** structured according to a general formula H_mO_n wherein m and n have null or

positive integer values with the exception that m and n can not be 0 at the same time. In other words, Applicant's gas is a mixture of jointly structured H-H-O forms of gas.

Note that Gonzalez states that assuming that the apparatus is operational, at some time the piston 14 will be moving to the right, and will engage switch 38. When contact is cut the spark plug fires and the HyOx comprising combustible mixture of H gas and O gas, explosively recombines and the force of the explosion forces the piston out of the cylinder per Fig. 2. When the H and O separated gases recombine, a small amount of trace water is formed. (See col. 4, lines 60 to col. 5, line 22).

Gonzalez's invention is a reciprocating piston system incorporating an electrolytic cell. Its design is such that the top is vented to allow the Brown gas being produced to flow into the piston area. (See co. 7, lines 48-53). It is designed to operate with a cooling fluid through funnel 52 and is therefore suitable for marine underwater jet propulsion systems. (See col. 6, lines 1-4).

Gonzalez components are not subject to damage from the HyOx explosions because there is only enough oxygen to burn the hydrogen, as long as care is taken to use compatible materials. (See col. 6, lines 12-15). This confirms that Gonzalez is producing Brown's gas in the form of separated H and O. Over a relatively short time, the burning of the H gases in Gonzalez's device will lead to the components becoming brittle and failing. Therefore, Gonzalez's device is inefficient and really not suitable for long term use burning H gas separate from the water.

Further, Gonzalez states: "It is preferable that the plates be spaced as closely together as possible, without of course, touching one another. The closer the plates, the less resistance to current flow through the electrolytic solution. As technology permits, separations on the order of molecular diameters, of water for example, are anticipated. " (See col. 6, lines 31-37). Applicant has found that if the plates are too close, the production becomes extremely inefficient and only

Brown's gas at best may be produced. Applicant has found that, contrary to Gonzalez teaching to place the plates as close together as possible (molecular diameter spacing suggested), a spacing in the range of about 0.15 inches to about 0.35 inches is preferable to produce the gas mixture claimed by Applicant. Therefore, Gonzalez teaches away from Applicant's teachings, as his device is clearly structured differently from that of Applicant's electrolyzer.

In col. 6, lines 49-55, Gonzalez acknowledges that increases in temperature of the electrolytic cell result in progressively inefficient operation and lower production levels and much energy is wasted in just heating the water. He uses a temperature control switch connected to a heating unit. Applicant controls the heat using heat sink means in the form of the fins around the outside of the chamber, a much more effective and efficient structural difference between the present invention and Gonzalez's device.

Applicant's invention is a non-vented pressurized electrolyzer. The reservoir area at the top of the solution is not vented off, but remains in the reservoir until a demand is created by the system in which the electrolyzer is utilized. Applicant adds his gas to a fuel and does not use it as a sole gas in an engine system as Gonzalez does. Gonzalez's device and use will cause the engine to seize due to hydrogen embrittlement.

Fig. 1 further discloses an arrangement with a middle electrode plate connected to the positive terminal. Applicant's invention has 2 principal electrodes, one on each end of the interposed supplemental electrodes, which are not connected to an electrical terminal.

The '060 patent further fails the anticipation test of being identically disclosed for the reasons stated above and in the attached Rule 132 declaration which is attached herein and incorporated by reference in these remarks. The examiner is also requested to review the

specification pages 22-27 where independent tests were done to analyze the gas produced using the novel electrolyzer configuration claimed in the instant application.

Accordingly, each and every element of Applicant's claims have not been taught in that single reference. Applicant respectfully submits that claims 1-8 have not been anticipated by the patent under 35 U.S.C. §102(b), and respectfully requests that such rejection be withdrawn.

CONCLUSION

Even though the initial claims in this important patent application were drawn to a new, useful and nonobvious invention, they have now been amended to increase their specificity of language. Applicant respectfully submits that claims __ are patentable over the art of record.

A Notice of Allowance is earnestly solicited.

If the Office is not fully persuaded as to the merits of Applicant's position, or if an Examiner's Amendment would place the pending claims in condition for allowance, a telephone call to the undersigned at (727) 538-3800 would be appreciated.

Very respectfully,

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